

Work Order ID 61983

Tuesday, September 14, 2010 10:07:46 AM



Page 1

Item ID: D206-667-203TRN

Accept



Setup Start



Revision ID:

Stop



Item Name: Crosstube Turning Detail

Start Date: 9/14/2010 Start Qty: 1.00



Cust Item ID:

Required Date: 9/21/2010 Req'd Qty: 1.00

Customer:

Reference:

Approvals:

Process Plan:

[Signature]

Date: 10-9-14

Tooling:

Date:

QC:

Date:

SPC (Y/N):

Date:

Run Start



Stop



Sequence ID/
Work Center ID

Operation
Description

Set Up/
Run Hours

Tool ID

Tool #

Plan
Code

Accept
Qty

Reject
Qty

Reject
Number

Insp.
Stamp

Draw Nbr

Revision Nbr

D206-667-243

Rev C

100

0.00



MORI SEIKI CNC LATHE LARGE

Mori Seiki

Memo

0.00

Mori Seiki CNC Lathe Large

1-Fill tube with sand & install plugs DT8534 on both ends as per Folio FA089□2-Turn first side as per Folio FA089□3-File down transition lines smooth.

Q.A. 10-09-200

Pto →

110

QC1- Inspect dimensions to dimension sheet

0.00



QC

Memo

0.00

Quality Control

Q.A. 10-09-200

120

0.00



MORI SEIKI CNC LATHE LARGE

Mori Seiki

Memo

0.00

Mori Seiki CNC Lathe Large

1-Turn second side as per Folio FA089□2-File down transition lines smooth.
□
3-Remove sand and plugs□4-Scrib part# and batch #

Q.A. 10-09-200

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng/ Prod Mgr	Approval QC Inspector

Part No: ~~D206-667-203TRN~~ PAR #: D206-667-203TRN Fault Category: X-tubes NCR: Yes No DQA: / Date: 1009-23
 Resolution: Reswork accepted Disposition: Reswork use as is QA: N/C Closed: / Date: /

NCR: <u>61983</u>		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			
10/9/14	#100	After starting tube operator noticed noticed that lathe was taking too much material off. He then realized that the	/OS/10/2	- Scrap to length of extrusion if enable enable to use for another x-tube D2004-115	N/A for C. Action. See Below Action. /1009-15	/OS/10/2	S	10/09/14
		wrong program was loaded in to the machine. Then one end of tube has been brought down to a dia of 2.240" by	/OS/10/2	- Remove the affected 0.125 end off of the tube. - Continue to machine per Eng. mark-ups on the drawing, to shorten the curves by 0.062" taper the tube to nominal dims.	G.M. 10-09-20	S 10/09/20	/OS/10/2	S 10/09/14
		0.156 long. R.C. operator wasn't paying attention when loading program <u>LOA</u>	/OS/10/2	- inform operator to also double check program pro before running first tube.	S 10/09/20	G.M. 10-09-20	/OS/10/2	S 10/09/14

NOTE: Date & initial all entries

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Page 2

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Required Date: 9/21/2010 Req'd Qty: 1.00

Reference:

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Customer:

Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____
QC: _____ Date: _____ SPC (Y/N): _____ Date: _____

Run Start
Stop

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
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130 QC1- Inspect dimensions to dimension sheet

0.00



QC

Memo

0.00

Quality Control

A.m 10 - 09 - 2010

140 QC8- Inspect parts - second check

0.00



QC

Memo

0.00

Quality Control

S. Solis

TH

150 Crosstubes Chemical Conversion

0.00



HandFXtube

Memo

0.00

Hand Finishing Crosstubes

A.m 10 - 09 - 2010

W/O:		WORK ORDER CHANGES					
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Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

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Customer:

Reference:

Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____
QC: _____ Date: _____ SPC (Y/N): _____ Date: _____

Run Start



Stop



Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
160 	QC3- Inspect Part Finish	0.00							
QC Quality Control	Memo	0.00				(IX)	Q	MB	10-09-24
170 	Packaging	0.00							
Packaging Packaging	Memo Identify and Stock in kanban rack Location: <i>K tube eel</i>	0.00				(IX)	Q	MB	10-09-24
180 	QC21- Final Inspection - Work Order Release	0.00							
QC Quality Control	Memo	0.00							10/09/21 MF 10-9-21

W/O:		WORK ORDER CHANGES					
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NOTE: Date & initial all entries

Picklist Print

Tuesday, September 14, 2010 10:07:50 AM

Page 1

Work Order ID: 61983



Parent Item: D206-667-203TRN



Parent Item Name: Crosstube Turning Detail

Start Date: 9/14/2010

Required Date: 9/21/2010

Start Qty: 1.00

Required Qty: 1.00

Comments: IPP Rev:A 08-03-06 new issue DD verified by:ec
 IPP Rev B 08.04.02 Removed polish EC verified by: DD
 IPP Rev C 09.01.06 ECN 08-562 EC verified by:DD

Component Item ID/ Item Name	Replacement Item ID	Mfg/ Purch	Bin Item	Primary Location	Last Location	Route Seq ID	Unit of Measure	Qty on Hand	Qty per Kit	Total Qty	Qty Issued	Date Issued	Status
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D6004-115		Manufactured	No			100	Each	58.0000	1	1			
Crosstube Material													

Q.M 10-09-2010

Location	Loc Qty	Loc Code
LG	58	
34685	17	
34774	5	
38336	36	

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NOTE: Date & initial all entries

DART AEROSPACE LTD		Work Order:	01983
Description: Crosstube Assembly		Part Number:	D206-667-243
Inspection Dwg: D206-667-243 Rev: C		Page 1 of 1	

FIRST ARTICLE INSPECTION CHECKLIST

Inspection Sheet	Drawing Dimension	Tolerance	Actual Dimension	Accept	Reject	Method of Inspection	Comments
SIDE A	2.490	+0.005/-0.000	2.490	/		VAM-04	
	2.018	+0.005/-0.000	2.023	/		y	
	2.079	+0.005/-0.000	2.084	/		y	
	2.145	+0.005/-0.000	2.150	/		y	
	2.209	+0.005/-0.000	2.214	/		y	
	2.287	+0.005/-0.000	2.292	/		y	
	2.363	+0.005/-0.000	2.368	/		y	
	2.433	+0.005/-0.000	2.438	/		y	
	0.200	+/-0.010	0.200	/			
	0.500 x 30°	+/-0.010	0.500 x 30°	/		VAM-04	
	R0.063	+/-0.010	R0.063	/		R-G	
	R0.500	+/-0.010	R0.500	/		R-G	
	4.438	+/-0.030	4.438	/		Am-04	
	104.91	+/-0.020	104.750	2		TM Am-04	See 1/b Page #1
	2.490	+0.005/-0.000	2.490	/		VAM-04	
SIDE B	2.018	+0.005/-0.000	2.023	/		y	
	2.079	+0.005/-0.000	2.084	/		y	
	2.145	+0.005/-0.000	2.150	/		y	
	2.209	+0.005/-0.000	2.214	/		y	
	2.287	+0.005/-0.000	2.292	/		y	
	2.363	+0.005/-0.000	2.368	/		y	
	2.433	+0.005/-0.000	2.438	/		y	
	0.200	+/-0.010	0.200	/		VAM-04	
	0.500 x 30°	+/-0.010	0.500 x 30°	/		y	
	R0.063	+/-0.010	R0.063	/		R-G	
	R0.500	+/-0.010	R0.500	/		R-G	
	4.438	+/-0.030	4.438	/		VAM-04	

Measured by:	A. J.	Audited by:	S	Preliminary Approval:	N/A
Date:	10.09.20	Date:	10/09/20	Date:	N/A

Rev	Date	Change	Revised by	Approved
A	06.09.01	New Issue (P/O D206-667-203)	KJ/JLM	
B	10.08.25	Dwg Rev updated	KJ	

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

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NOTE: Date & initial all entries

Item	Qty	Part Number	Description
	-243		
1	X	D206-667-243	CROSSTUBE ASSEMBLY (206L HIGH AFT)
2	1	D6004-115	CROSSTUBE
3	2	D2873-043	NUT PLATE
4	2	D2873-045	NUT PLATE
5	2	D2892-1	SUPPORT
6	4	D3595-063-450	RUBBER CUSHION
7	4	MS21920-22	CLAMP
8	14	MS20601AD4W10	RIVET (OR NAS9302B-4-10)
9	A/R	MAGNOBOND 6398	ROCKWELL SPECIFICATION RBO-120-023 ADHESIVE (TEXTRON/BELL SPEC. 299- 947-100, TYPE II, CLASS 2 ADHESIVE)

GENERAL NOTES:

- 1) MATERIAL: MANUFACTURED FROM D6004-115
FINISHED LENGTH = 104.91±0.020
- 2) FINISH: CHEMICAL CONVERSION COAT PER DART QSI 005 4.1
PRIME INSIDE AND OUTSIDE PER DART QSI 005 4.2
PAINT OUTSIDE PER DART QSI 005 4.2
- 3) TOLERANCES ARE PER DART QSI 018 UNLESS OTHERWISE NOTED.
- 4) UNITS: INCHES UNLESS OTHERWISE NOTED.
- 5) BREAK SHARP EDGES: 0.005 TO 0.010 MAX.
- 6) IDENTIFICATION: SCRIBE DART PART NUMBER "D206-667-243" AND BATCH NUMBER ON
INSIDE OF CUFF USING VIBRATING STYLUS.
- 7) WEIGHT: 21.9 lbs
- 8) PART IS SYMMETRIC ABOUT CENTERLINE.
- 9) RUN CUTTER OFF PART WHERE INDICATED. BLEND OUT EDGE LONGITUDINALLY,
TRANSITION SHOULD BE SMOOTH.
- 10) BEND PROGRESSIVELY WITH A MINIMUM OF 8 PASSES. MAXIMUM TUBE FLATTENING DUE
TO BENDING IS 6% BASED ON O.D.
- 11) LIQUID PENETRANT INSPECT OUTSIDE SURFACE OF CROSSTUBE PER QSI 038.
- 12) INSTALL D2892-1 SUPPORT USING 0.03" TO 0.06" THICK LAYER OF MAGNOBOND 6398 PER
QSI 015. LET CURE FOR 12 HOURS AFTER INSTALLATION AND PRIOR TO PACKAGING.
- 13) INSTALL MS21920-22 CLAMPS WITH D3595-063-450 RUBBER CUSHIONS TO SECURE THE
D2892-1 SUPPORT ON TOP SIDE OF THE CROSSTUBE. ENSURE CLAMP MECHANISMS ARE
LOCATED ON CROSSTUBE SUPPORTS.
- 14) EXTREME CARE MUST BE TAKEN TO PROTECT THE OUTSIDE SURFACE OF THE TUBE. THE
OUTSIDE SURFACE MUST BE SMOOTH AND FREE FROM SURFACE DEFECTS SUCH AS
SCRATCHES, NICKS, OR DENTS. DEFECTS UP TO 0.005" MAY BE BLENDED OUT
LONGITUDINALLY. CIRCUMFERENTIAL GRIND MARKS ARE UNACCEPTABLE.
- 15) TORQUE CLAMPS 80 TO 100 IN-LB. ENSURE AT LEAST 1.5 THREADS ARE SHOWING IN
SAFETY AND THAT NUT HAS NOT BOTTOMED-OUT AFTER TORQUING.

SHOP COPY
RETURN TO
ENGINEERING
UNCONTROLLED
SUBJECT TO APPROVAL
WITHIN 30 DAYS
WORK ORDER
NO. 61983
BDO 9-14

RELEASED
8/11/14

C	REVISE GENERAL NOTES/PART LIST (ZN D7-1); REORGANIZED VIEWS AND REFORMATTED DRAWING TO CURRENT STANDARDS. D3595-063-450 WAS D2856-400-773 (ZN D6-2 & A5-2); REMOVED REF. & ADD TOLERANCES (ZN 4-3, CS-3, D3-3); RELOCATED FLAG #6 (ZN A8-3) PER NCR 210; MOVED TURNING DETAIL & UPDATED TOLERANCE TO SHEET 4.	RF	08.11.06
B	ADD HOLES AND NUT PLATES FOR COMPATABILITY WITH BHT/AA SKUDTUBES	PH	05.07.26
A	NEW ISSUE	CP	00.11.17
REV.	DESCRIPTION	BY	DATE
DESIGN	RF	DART AEROSPACE LTD	
DRAWN	RF	HAWKESBURY, ONTARIO, CANADA	
CHECKED	RF	DRAWING NO.	REV. C
MFG. APPR.	RF	D206-667-243	SHEET 1 OF 4
APPROVED	RF	TITLE	SCALE
DE APPR.	RF	CROSSTUBE ASSY (206L HIGH AFT)	NTS
DATE	08.11.06	COPYRIGHT © 2006 BY DART AEROSPACE LTD THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL AND IS SUPPLIED ON THE EXPRESS CONDITION THAT IT IS NOT TO BE USED FOR ANY PURPOSES OR COPIES OR COMMUNICATED TO ANY OTHER PERSON WITHOUT WRITTEN PERMISSION FROM DART AEROSPACE LTD.	

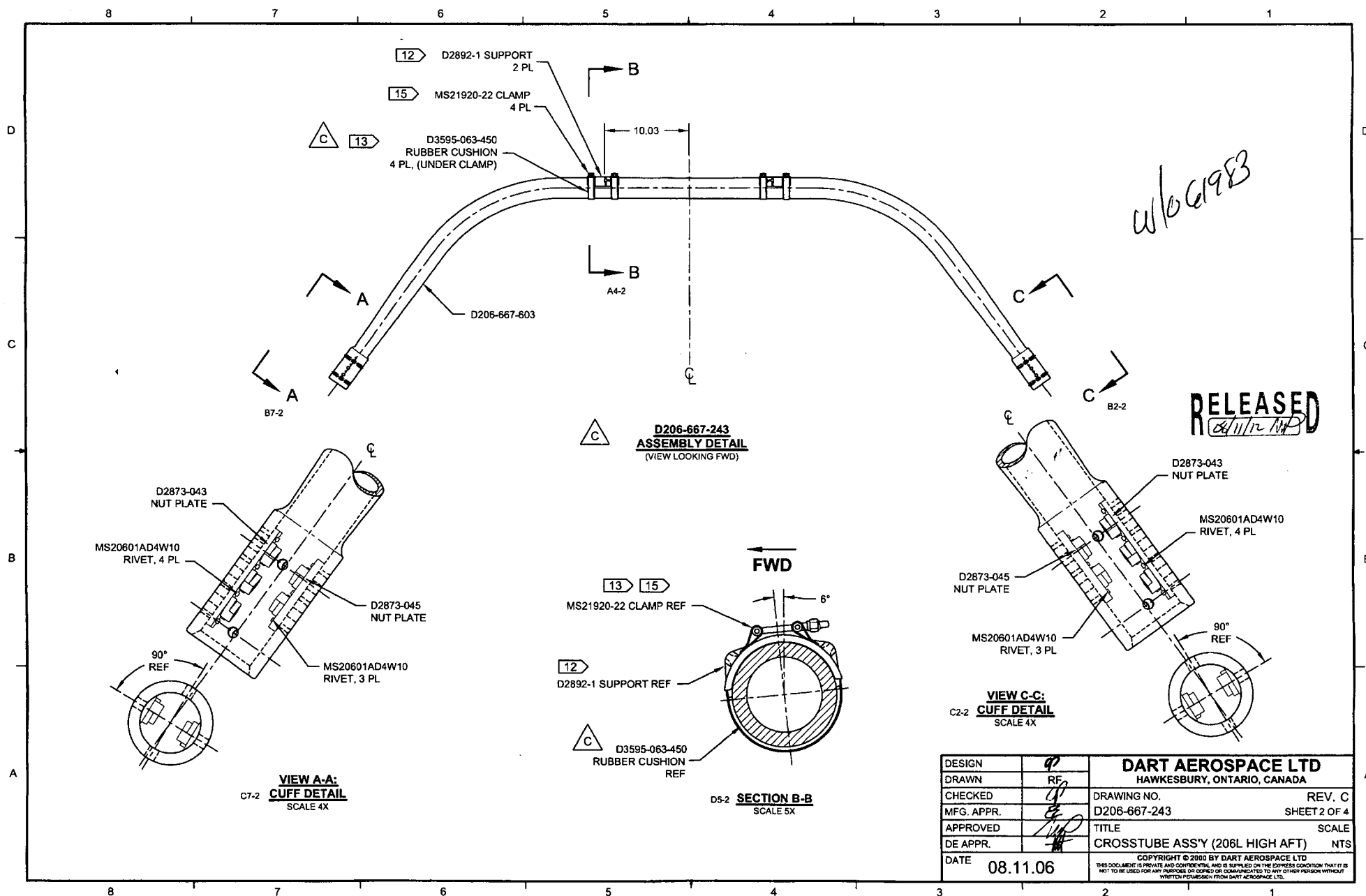
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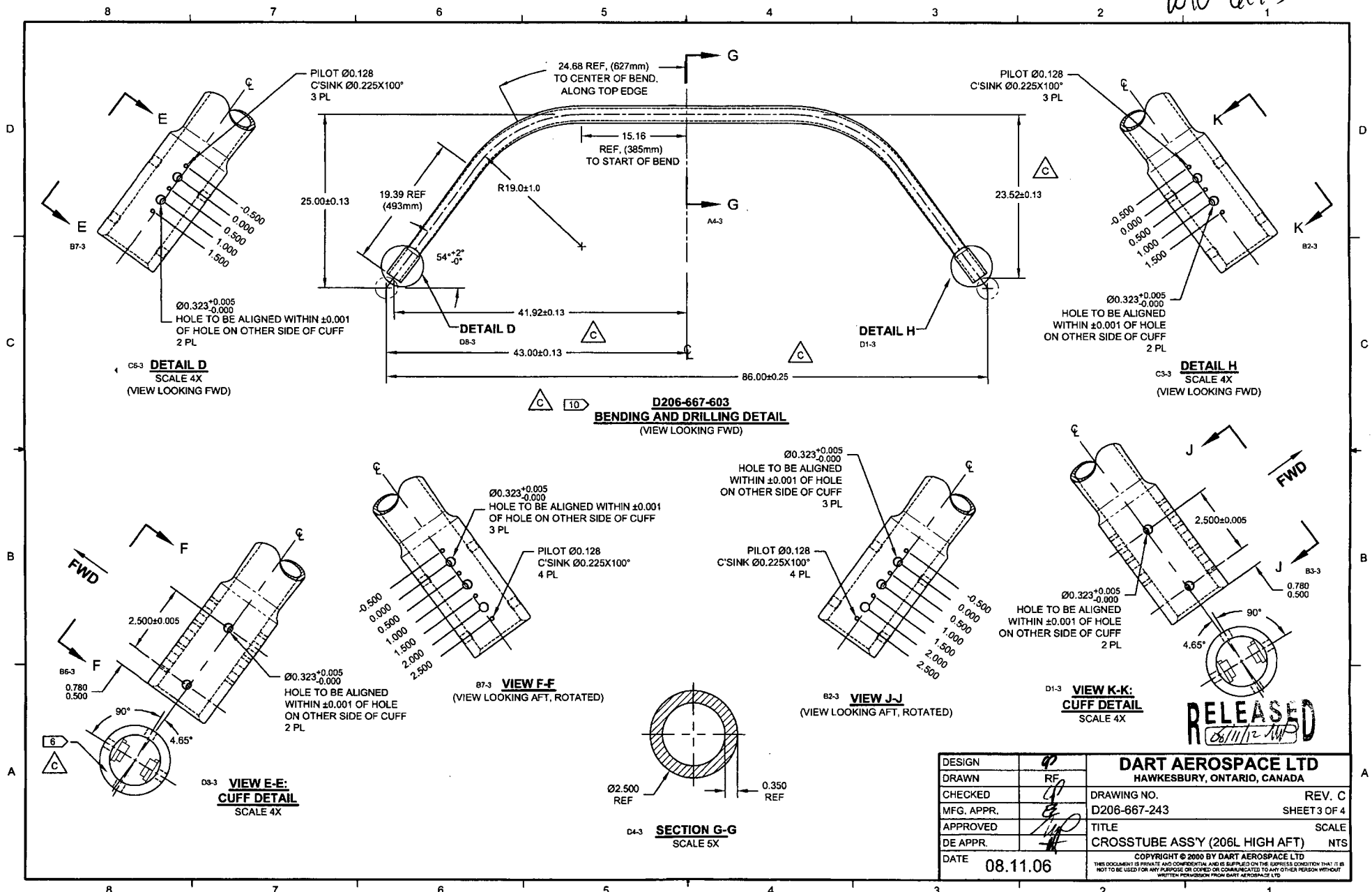
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WLO 61983



DESIGN	RF	DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA	
DRAWN	RF	DRAWING NO.	REV. C
CHECKED	RF	D206-667-243	SHEET 3 OF 4
MFG. APPR.	RF	TITLE	SCALE
APPROVED	RF	CROSSTUBE ASS'Y (206L HIGH AFT)	NTS
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DATE	08.11.06		

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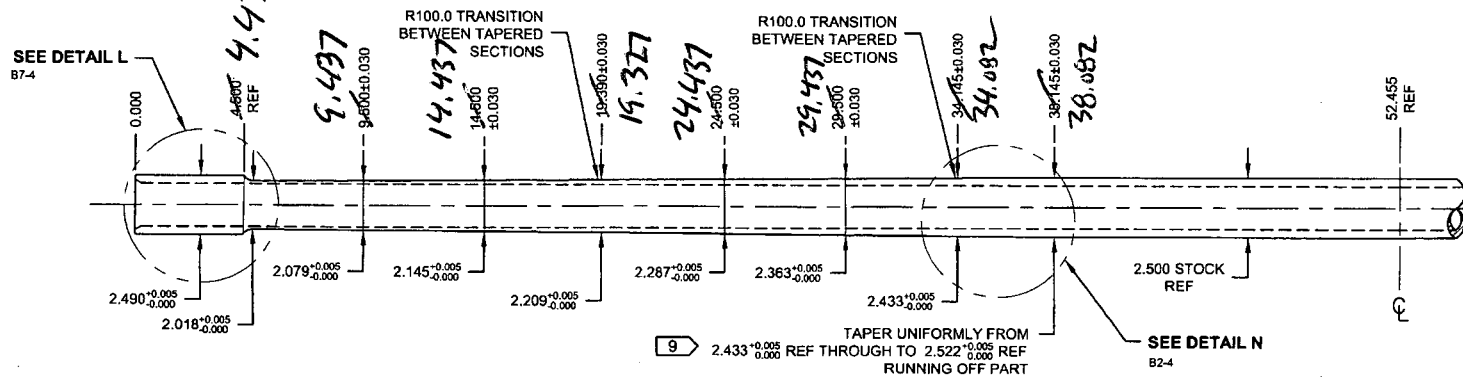
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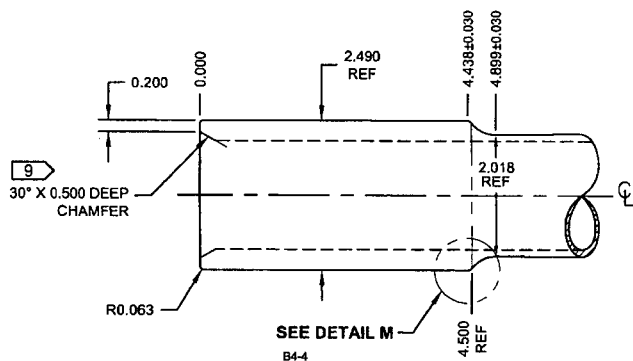
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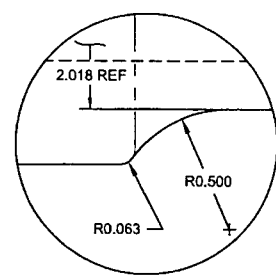
← MOVE TAPER OVER 0.063, BOTH SIDES *P* 10.09.15
w/o 4983



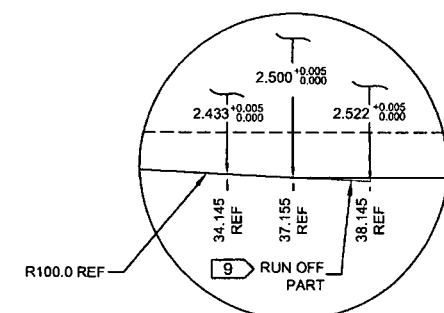
TURNING DETAIL



DETAIL L: CROSSTUBE CUFF
NOT TO SCALE



DETAIL M: CUFF TRANSITION
NOT TO SCALE



DETAIL N: TAPER RUN-OFF
NOT TO SCALE

RELEASED
08/11/2006

DESIGN	<i>q</i>	DART AEROSPACE LTD	
DRAWN	RF	HAWKESBURY, ONTARIO, CANADA	
CHECKED	<i>P</i>	DRAWING NO.	REV. C
MFG. APPR.	<i>P</i>	D206-667-243	SHEET 4 OF 4
APPROVED	<i>P</i>	TITLE	SCALE
DE APPR.	<i>P</i>	CROSSTUBE ASS'Y (206L HIGH AFT)	NTS
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